# FC730-4K User Manual

Model: FC730-4K



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# 1. Note

# **Electric Safety**

Installation and operation must accord with electric safety standard.

#### **Use Caution to Transport**

Avoid stress, vibration or soakage in transport, storage and installation.

#### **Polarity of Power Supply**

The power supply of this product is +12V, the max electrical current is 2A. Polarity of the power supply plug drawing shows as below.



#### **Installation Precautions**

Do not grasp the camera lens when carrying it. Don't touch camera lens by hand. Mechanical damage may be caused by doing so.

Do not use in corrosive liquid, gas or solid environment to avoid any cover (plastic material) damage. Make sure there is no obstacle within rotation range.

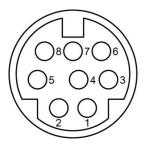
Please never power on before installation is completed.

#### Do not Dismantle the Camera

We are not responsible for any unauthorized modification or dismantling.

# 2. Control

# 2.1 RS232 Interface



No.	Function
1	DTR
2	DSR
3	TXD
4	GND
5	RXD
6	GND
7	IR OUT
8	NC



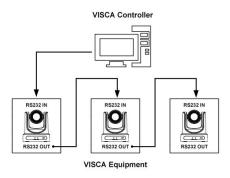
The correspondence between the camera and Windows DB-9 pin:

Camera	Windows DB-9
1.DTR	1.CD
2.DSR	2.RXD
3.TXD	3.TXD
4.GND _	4.DTR
5.RXD	5.GND
6.GND	6.DSR
7.IR OUT	7.RTS
8.NC	8.CTS
	9.RI

The correspondence between the camera and the Mini DIN pin:

Camera	Mini DIN
1.DTR 🔍	1.DTR
2.DSR 🖈	2.DSR
3.TXD	3.TXD
4.GND	4.GND
5.RXD	5.RXD
6.GND	6.GND
7.IR OUT	7.NC
8.NC	8.NC

# 2.2 VISCA Network



#### **Serial Communication Control:**

# **RS232 Communication Control**

The camera is controlled via RS232. The RS232 serial port parameters are as follows:

Baud rate: 2400/4800/9600/38400;

Starting Position: 1 bit

Data bit: 8 bits Stop bit: 1 bit



Check digit: None

# **RS485 Communication Control**

Control camera via RS485, half duplex mode:

Baud rate: 2400/4800/9600/38400;

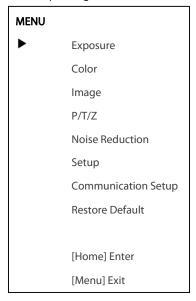
Starting position: 1 bit Data bit: 8 bits Stop bit: 1 bit Check digit: None

After power on, the camera goes to the upper right limit and then back to the middle position. The zoom lens is pulled to the farthest position, auto focus, and the aperture is adjusted to the default value. If the camera has preset 0 saved, the camera will be set to position 0 after the initialization is completed. At this point, the user can use the serial port command to control the camera.

# 3. GUI Settings

# 3.1 Menu

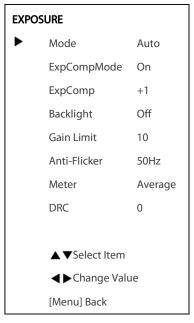
Press [MENU] button to display the main menu on the normal screen, using arrow button to move the cursor to the item to be set. Press the [HOME] button to enter the corresponding sub-menu.





#### 3.2 Exposure

Move the main menu cursor to [EXPOSURE], and press [HOME] key enter the exposure page, as shown in the following figure.



Mode: Exposure mode, optional items: Auto, Manual, SAE, AAE, Bright.

ExpCompMode: Exposure the compensation mode, optional items: On, Off (Effective only in Auto mode).

ExpComp: Exposure the compensation value, optional items:  $-7 \sim 7$  (Effective only in ExpCompMode item to On).

Backlight: Set the backlight compensation, optional items: On, Off (Effective only in Automode).

Bright: Intensity control, optional items: 0 ~ 17 (Effective only in Bright mode).

Gain Limit: Maximum gain limit, optional items: 0 ~ 15 (Effective only in Auto, SAE, AAE, Bright mode).

Anti-Flicker: Anti-flicker, optional items: Off, 50Hz, 60Hz (Effective only in Auto, AAE, Bright mode).

Meter: Optional items: Average, Center, Smart, Top.

Iris: Aperture value, optional items: F1.8, F2.0, F2.4, F2.8, F3.4, F4.0, F4.8, F5.6, F6.8, F8.0, F9.6, F11.0, Close (Effective only in Manual, AAE mode).

Shutter: Optional items: 1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000 (Effective only in Manual, SAE mode).

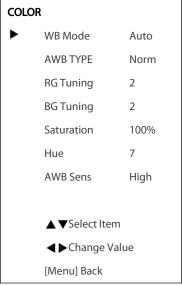
Gain: Optional items: 0 ~ 7 (Effective only in Manual mode).

DRC: DRC strength, optional items:  $0 \sim 8$ .



# 3.3 Color

Move the main menu cursor to [COLOR], and press [HOME] key enter the color page, as shown in the following figure.



WB Mode: White balance mode, optional items: Auto, Indoor, Outdoor, One Push, Manual, VAR.

AWB TYPE: Optional items: Norm, SPEC; (Effective only in Auto mode).

RG Tuning: Optional items:  $0 \sim 10$  (Effective only in Auto mode);  $-10 \sim +10$  (Effective only in One Push, VAR mode).

BG Tuning: Optional items:  $0 \sim 10$  (Effective only in Auto mode);  $-10 \sim +10$  (Effective only in One Push, VAR mode).

Saturation: Optional items: 60% ~ 200%.

Hue: Optional items: 0 ~ 14.

AWB Sens: The white balance sensitivity, optional items: Low, Middle, High.

RG: Red gain, optional items: 0 ~ 255 (Effective only in Manual mode).

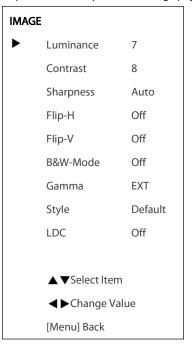
BG: Blue gain, optional items: 0 ~ 255 (Effective only in Manual mode).

Color Temp: Optional items: 2500K ~ 8000K (Effective only in VAR mode).



# 3.4 Image

Move the main menu cursor to [IMAGE], and press [HOME] key enter the image page, as shown in the following figure.



Luminance: Brightness adjustment, optional items: 0 ~ 14.

Contrast: Contrast adjustment, optional items: 0 ~ 14.

Sharpness: Sharpness adjustment, optional items: Auto, 0 ~ 15.

Flip-H: Image flipped horizontally, optional items: On, Off.

Flip-V: Image Flip Vertical, optional items: On, Off.

B&W-Mode: Optional items: On, Off.

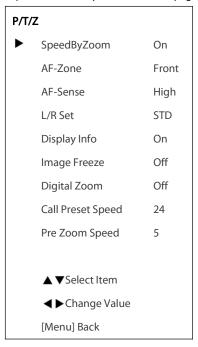
Gamma: Optional items: EXT, PC, 0.48, 0.5, 0.56, 0.63. Style: Optional items: Default, Norm, Bright, PC.

LDC: Optional items: On, Off.



# 3.5 P/T/Z

Move the main menu cursor to [P/T/Z], and press [HOME] key enter the P/T/Z page, as shown in the following figure.



SpeedByZoom: The depth of field scale switch, optional items: On, Off.

AF-Zone: Interested in focusing area, optional items: Front, Top, Center, Bottom.

AF-Sense: Automatic focusing sensitivity options, optional items: Low, Normal, High.

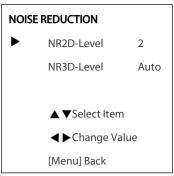
L/R Set: Optional items: STD, REV. Display Info: Optional items: On, Off. Image Freeze: Optional items: On, Off.

Digital Zoom: Optional items: Off, 2x, 4x, 8x, 16x.

Call Preset Speed: Optional items:  $1 \sim 24$ . Pre Zoom Speed: Optional items:  $0 \sim 7$ .

# 3.6 Noise Reduction

Move the main menu cursor to [NOISE REDUCTION], and press [HOME] key enter the noise reduction page, as shown in the following figure.



NR2D Level: 2D noise reduction, optional items: Off, Auto,  $1 \sim 5$ . NR3D Level: 3D noise reduction, optional items: Off, Auto,  $1 \sim 8$ .



# 3.7 Setup

Move the main menu cursor to [SETUP], and press [HOME] key enter the setup page, as shown in the following figure.



Language: Optional items: EN, Chinese, Russian.

DVI Mode: Optional items: DVI, HDMI. Auto Scan Shoot: Optional items: On, Off. SDI-3G Mode: Optional items: LEVEL-A, LEVEL-B.

Auto Inversion: Optional items: On, Off. Trace Mode: Optional items: On, Off. Tally Mode: Optional items: On, Off. Note: How to enable the trace function

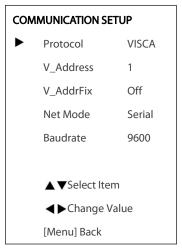
- 1. Use the remote control, enter the menu-setup-tracking mode, switch to "On", set the appropriate trace Mutiple, the Guard can choose the "Home" position or the preset position "9", and exit the OSD menu;
- 2. Long press the "Home" button of the remote control for more than 5 seconds, "Target Telection" box will appear. Press the number key of the remote control to select a single ID target and press the "Home" button to confirm, which will automatically enter the tracking state;
- 3. When the target is lost and there is no other humanoid target, the camera will return to the Home position or preset position 9;
- 4. If you need to turn off the tracking mode, long press the remote control "Home" button for more than 5 seconds, "Out of Track" box will appear, press the remote control "Home" button to exit.



#### 3.8 Communication Setup

Move the main menu cursor to [COMMUNICATION SETUP], and press

[HOME] key enter the communication setup page, as shown in the following figure.



Protocol: Control protocol type, optional items: Auto, VISCA, PELCO-D, PELCO-P.

V\_Address: Optional items: 1 ~ 7. (Effective only in Auto, VISCA protocol).

V\_AddrFix: Optional items: On, Off (When set to On, useless in 88 30 01 FF Command).

P\_D\_Address: Optional items: 0 ~ 254. (Effective only in Auto, PELCO-D protocol).

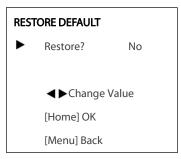
P\_P\_Address: Optional items: 0 ~ 31. (Effective only in Auto, PELCO-P protocol).

Net Mode: Set the serial port network control, optional items: Serial, Paral.

Baudrate: Serial port baud rate, optional items: 2400, 4800, 9600, 38400.

#### 3.9 Restore Default

Move the main menu cursor to [RESTORE DEFAULT], and press [HOME] key enter the restore default page, as shown in the following figure.



Restore: Confirm restore factory settings, optional items: Yes, No.

Note: Press [HOME] button to confirm, all parameter restore default, include IR Remote address and VISICA address.

# 4. Network Function

# **4.1 Operating Environment**

Operating System: Windows 7/8/10, Mac OS X, Linux, Android

Network Protocol: TCP/IP

Client PC: P4/128M RAM/40G HDD/ support

scaled graphics card, support DirectX 8.0 or more advanced version.



# 4.2 Equipment Installation

1. Connect video conference camera to your internet or to your PC via network cable.

2.Turn on DC 12V power.

3.If the network connection is normal, the connection light (green) at the network interface will light up within 5 seconds, and the data indicator (orange) will flash, indicating that the physical connection of the camera has been completed.

# 4.3 Internet Connection

There are two main ways to connect video conference camera.

1. Connect by Network Cable



2. Connect by Switch/Router



# 4.4 Camera Controlled by LAN

# 4.4.1 Setup IP Address

If you don't know camera IP, view as below:

Method 1: Press \* and # and 4 on remote controller one by one, the camera IP address will be shown on screen. Method 2: Connect camera to PC with network cable, use "upgrade\_En.exe" to search for IP address.

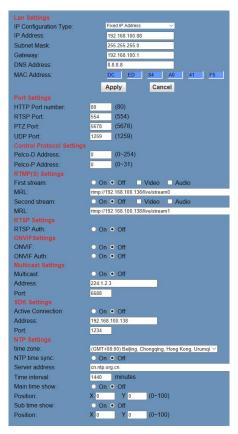


upgrade

Change IP address, two methods as below:



Method 1: Login the web page, select "Network > Lan Settings", change IP address, subnet mask and gateway. Click "Apply" and restart the camera.



Method 2: Open "upgrade\_En.exe", change IP and click "Set". After modified, the video conference camera will be restart.



# Change IP address:

- Step 1 Search the IP address of camera.
- $\textbf{Step 2} \ \textbf{Select the camera IP of you want to change}.$
- Step 3 Select the config dialog of upgrade applets.
- Step 4 Change the IP address, netmask and gateway, then click "Set".
- Step 5 Finish.



#### 4.4.2 Visit/Access Camera

Input http://192.168.100.88 to IE (better with IE web browser, others will cause little latency), a login window pop up, input username: admin, password: admin, shown as below:



After login, shown as below:



If user first time use this camera by internet (only for new user), must install a player software (VLC). Please go to VLC website <a href="http://www.videolan.org/vlc/#download">http://www.videolan.org/vlc/#download</a> and Install the 32-bit VLC (player software). After installation, login again, will show as above.

# 4.5 Camera Controlled by WAN

# 4.5.1 Setup IP Controlled by Dynamic DNS

Two dynamic DNS: Dyndns.org, 3322.org.

#### **Router Port Mapping:**

Take a router for example, enter the Router Home Page (interface page), select "Advanced" - "Virtual Server", add a new port number in "Ext Port", add a new port number in "Int port", put camera IP address to "Internal IP", then select "Save", shown as below:





#### 4.5.2 Dynamic DNS Visit Camera

Set domain name to camera, setup the parameter, then dynamic DNS can access camera. Access link: http://hostname: port number. For example, setup host computer name: youdomain.f3322.org, the camera port number is 89, the access link should be <a href="http://youdomain.3322.org">http://youdomain.3322.org</a>;89.

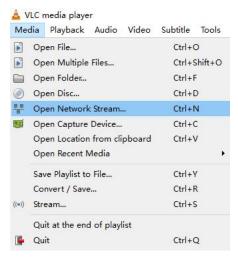
If the camera port default is 80, then unnecessary to input port number, use host name can access camera directly.

# 4.5.3 VLC Stream Media Player Monitor

#### Visit VLC Media Server Procedure

Step 1 Open VLC media player.

**Step 2** Click "Media > Open Network Stream", or click "Ctrl + N"; as below:



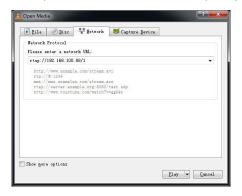
# Step 3 Input URL address:

rtsp://ip: port number/1 (First stream);

rtsp://ip: port number/2 (Second stream).

# Step 4 Click "Play".

RTSP port number default 554. If the camera port default is 80, then unnecessary to input port number of URL address.



# 4.6 Camera Parameter Setup



#### 4.6.1 Homepage Introduction

#### Menu

All pages include two menu bars:

Real time monitoring: displaying video image

Parameter setup: with function buttons.

#### A. Video Viewing Window

Video viewing window must be same as video resolution, the bigger the resolution is, the bigger the playing area is. Double click viewing window, will show full-screen, double click again, will return to initialized size.

Status bar in viewing window shown as below:



- 1. Video playback pause button: control real-time video pause, stop the last picture, click recoverable video again.
- 2. Audio control buttons: can adjust the volume or set silent mode.
- 3.Full screen switch button.

#### B. PTZ Setup



#### Pan and Tilt Control

Up, Down, Left and Right arrows and the home button allow you to manually drive the camera to the desired position.

#### Zoom

Zoom In and Zoom Out buttons allow for wide or narrow view of the space.

#### Focus

Focus In and Focus Out buttons allow for fine manual focus adjustment if the camera has any problems auto focusing on the difficult object.

#### PTZ Speeds

Pan speed can be set at any rate between  $1 \sim 24$ , Tilt speed can be set at any rate between  $1 \sim 20$ . Zoom and Focus speeds can be set at any rate between  $0 \sim 7$ .

#### **PTZ Presets**

After manually setting up a shot that you would like to return to later, you can save presets for quick recall of these positions. Type a number between 0 and 254 into the Preset box.

Click the "Set" button to save the current location with that preset number. Click the "Call" button to cause the camera to return to that position. This enables smooth, quick and convenient control without the need to manually drive the camera. You can set up preset that user want as below.

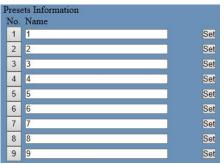


Method 1: Type a number into the Preset box.



Preset: Optional items: 0 ~ 254.

Method 2: Type the name into the Presets Information.



Click "Set" button, when PTZ turn to other position, click "Call" button or click "No." of the Presets Information, PTZ will turn back to preset position.

# PTZ / OSD Dropdown

From the dropdown menu, clicking the OSD option will open the on-screen display menu of the camera giving you control from within the IP interface.

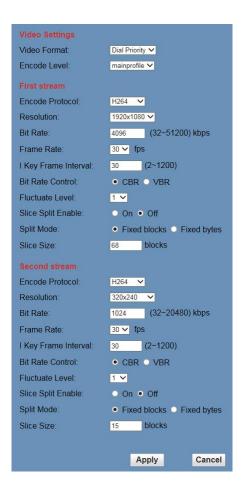
# C. Language Selection



 ${\it Click either "Chinese", "English" or "Russian" to change the language of the webpage.}$ 



#### 4.6.2 Video Settings



#### Video Format

Support 50Hz (PAL) and 60Hz (NTSC), and Dial Priority three formats.

# **Encode Level**

Support baseline, mainprofile, highprofile and svc-t four levels.

# **Encode Protocol**

Support H.264, H.265 and MJPEG three protocols.

# Resolution

First stream support 3840x2160, 1920x1080, 1280x720, 1024x576, 960x540, 640x480, 640x360. Second stream support 1920x1080, 1280x720, 1024x576, 720x576 (50Hz support), 720x480 (60Hz support), 720x408, 640x360, 480x270, 320x240, 320x180; The bigger resolution is, the clearer the image will be, more network bandwidth will be taken.

# **Bit Rate**

The user can specify the bit rate. Generally speaking, the larger of the bit rate, the clearer of the image. However, the configuration of the bit rate needs to be combined with the network bandwidth. When the network bandwidth is narrow and the bit rate is configured larger, the video stream cannot be transmitted normally, and the visual effect is worse.

#### Frame Rate

User can specify the size of the frame rate, generally, the frame rate greater, the image more smooth; Frame rate is smaller, the more sense of beating.

# I Key Frame Interval

Set interval between 2 I frame, the bigger interval is the response will be lower from viewing window.

#### Bit Rate Control

Code stream control way:



Constant Bit Rate: Video coder will be coding according to preset speed.

Variable Bit Rate: Video coder will adjust the speed based on preset speed to gain the best image quality.

#### Fluctuate Level

Restrain the fluctuation magnitude of variable rate, grade  $1 \sim 6$ .

# Slice Split Enable

Enable or disable slice split function.

# Split Mode

Select split mode, optional items: Fixed blocks, Fixed bytes.

#### Slice Size

Set the size of slice.

#### 4.6.3 Image Settings



#### **Brightness**

Image bright 0  $\sim$  14, slider control, on the right shows the corresponding numerical. Default value is 7.

#### Saturation

Saturation 0  $\sim$  14, slider control, on the right shows the corresponding numerical. Default value is 5.

#### Contrast

Contrast 0  $\sim$  14, slider control, on the right shows the corresponding numerical. Default value is 7.

# Sharpness

Sharpness 0  $\sim$  15 and auto, slider control, on the right shows the corresponding numerical.

#### Hue

Hue 0  $\sim$  14, slider control, on the right shows the corresponding numerical.

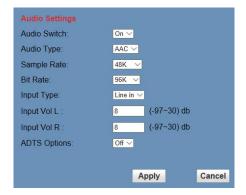
Default value is 7.

# Flip & Mirror

Tick Flip to realize image upside down, tick mirror to realize image around the mirror. Default value is not tick.



# 4.6.4 Audio Settings



# **Audio Switch**

Enable or disable audio switch.

# **Audio Type**

Optional items: G711A, AAC.

#### Sample Rate

Optional items: 44.1K, 48K.

# Bit Rate

Optional items: 96K, 128K, 256K.

# Input Type

Optional items: Line in.

# Input Vol L

The volume of the left channel.

# Input Vol R

The volume of the right channel.

# **ADTS Options**

Optional items: On, Off.

# 4.6.5 System Settings



#### Work Mode

The default work mode is RTSP.
Optional items: RTSP, SDK, Multicast.

# Reboot

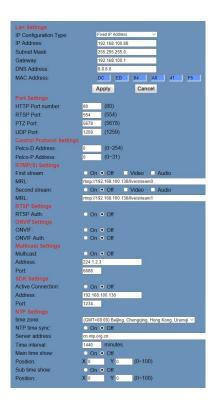
Click the "Reboot" button, system restart.

# Username and password

The user can modify the password (letters and Numbers only).



#### 4.6.6 Network Settings



# Lan Settings

Default the IP address is 192.168.100.88, the MAC address cannot be modified.

# **Port Settings**

# A. HTTP Port

IP address identifies the network device, the device can run multiple web applications, each network program using network port to transmit data, so data transmission to be carried out between the port and port. Port setting is to set up web server program using which port to transmit. When port mapping, need to be consistent with the port number (default port: 80).

B. RTSP Port

The video conference camera support RTSP protocol, use the VLC tools broadcast, default port: 554.

C. PTZ Port

Support TCP connection then control camera, default port: 5678.

D. UDP Port

Support UDP protocol, default port: 1259.

#### **Control Protocol Settings**

Setting the camera control communication protocol, include Visca address, Pelco-D address and Pelco-P address.

#### RTMP(S) Settings

Setting the MRL of RTMP, select enable or disable video and audio. You can select control code stream of "On", "Off", "Video", "Audio" between in the two streams.

#### **RTSP Settings**

Turn On/Off RTSP auth.

# **ONVIF Settings**

Turn On/Off ONVIF and ONVIF auth.

# **Multicast Settings**



Turn On/Off multicast. Setting the multicast address (default value is 224.1.2.3) and port (default value is 6688, then 6688 is the multicast port of the first stream; 6690 is the multicast port of the second stream).

#### **SDK Settings**

Turn On/Off active connection. Setting SDK address (default value is 192.168.100.138) and port (default value is 1234).

# **NTP Settings**

Turn On/Off NTP time sync, main time show and sub time show. Setting NTP server address, time interval, main stream position and sub stream position.

#### 4.6.7 Device Information

Display the current device information.



# 4.7 Download the Upgrade Program

If you need the camera upgrade program, please contact the manufacturer.



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# 5. Maintenance and Troubleshooting

#### 5.1 Camera Maintains

If camera will not be used for a long time, please turn off power switch, disconnect AC power cord of AC adaptor to the

Please use soft cloth or tissue to clean the camera cover.

Please use the soft dry cloth to clean the lens. If the camera is very dirty, clean it with diluted neuter detergent. Do not use any type of solvents, which may damage the surface.

# 5.2 Unqualified Application

No shooting extreme bright object for a long period of time, such as sunlight, light sources, etc.

No operating in unstable lighting conditions, otherwise image will be flickering.

No operating close to powerful electromagnetic radiation, such as TV or radio transmitters, etc.

#### 5.3 Troubleshooting

#### 5.3.1 Image

The monitor shows no image

1.Check that the camera power supply is connected, the voltage is normal, and the power indicator light is always on.

2. Turn off the power switch to check whether the camera is self-testing.

3. Check the cable of video platform and TV whether correct connection.

Sometimes without the image

Check the cable of video platform and TV whether correct connection.

Image have jitter when the camera lens at max multiple

1. Check whether the camera installed position be stabled.

2. Check whether have vibrating machinery or object near the camera.

There is no video image in IE Browser

Please visit VLC website (http://www.videolan.org/vlc) download and install the 32-bit VLC media player, after it installed, visit video conference camera will have normal image display.

Unable to access video conference camera through IE Browser

1. Using PC to access the network to test whether the network access can work properly, first of all, the network fault caused by the PC virus can be eliminated, until the PC and video conference camera can communicate with each other Ping.

2.Disconnect the network, connect video conference camera and PC separately, and reset the IP address of PC.

3. Check IP address, subnet mask, and gateway settings for video conference camera.

4.Check whether the MAC address is conflicts.

5. Check whether the web port is modified. The default is 80.

6. Forget the IP address or login password

Please remember (The default IP address: 192.168.100.88; default user name: admin; default password: admin).

#### 5.3.2 Control

Why other function keys except MENU are invalid in the remote control

Tracking mode may be turned on, try to close the tracking mode, long press the remote control "Home" button for more than 5 seconds, "Out of Track" box will appear, press the remote control "Home" button to exit.

Remote control cannot control

1. Check and replace the new battery for the remote controller.

2. Check whether the camera working mode is correct.



3. Check whether the address of remote control can match the camera. Serial port cannot control

1. Check whether the camera protocol, address and baud rate such is the same.

2.Check whether the control line is connected well.









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